


Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

## REMARKS

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,

  
David J. Cushing  
Registration No. 28,703

SUGHRUE MION, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, D.C. 20037-3213  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

3. (Amended)A tunable laser according to ~~either claim 1 or claim 2~~, characterized in that the length  $L_2$  of the tunable section (2) depends on the tuning range of the laser in accordance with the following equation:

$$\Delta\lambda = \lambda^2/2(n_1L_1+n_2L_2)$$

where  $\Delta\lambda$  is the tuning range of the laser,

$\lambda$  is the emission wavelength of the laser, and

$n_1$ ,  $n_2$  are the respective refractive indices of the first and second sections of the laser cavity.

5. (Amended)A tunable laser according to ~~any preceding claim~~claim 1, characterized in that the fixed reflector (15) and the mobile reflector (20) each have a reflectivity greater than or equal to 90%.

6. (Amended)A tunable laser according to ~~any preceding claim~~claim 1, characterized in that the fixed reflector (15) is an etched mirror.

10. (Amended)A tunable laser according to ~~any one of claims 6 to 9~~claim 6, characterized in that the fixed reflector (15) is on the front face of the active section (1).

11. (Amended)A tunable laser according to ~~any preceding claim~~claim 1, characterized in that the rear face of the active section (1) is antireflection treated.

12. (Amended)A tunable laser according to ~~any preceding claim~~claim 1, characterized in that the mobile reflector (20) is a mirror external to the laser cavity.

16. (Amended)A tunable laser according to ~~any one of claims 12 to 15~~claim 12,

characterized in that the mobile reflector (20) is controlled by a micro-electro-mechanical (MEM) controller.

17. (Amended) A tunable laser according to ~~any one of claims 1 to 16~~ claim 1, characterized in that the tunable section (2) is an air area.

18. (Amended) A tunable laser according to ~~any one of claims 1 to 16~~ claim 1, characterized in that the tunable section (2) is a gas area.

19. (Amended) A method of fabricating a tunable edge-emitting semiconductor laser according to ~~claims 1 to 18~~ claim 1, characterized in that it includes the following steps:

- producing a laser die (10) including a substrate (8) and an active layer (11) consisting of a gain medium, the length  $L_1$  of the gain medium being from 5  $\mu\text{m}$  to 12  $\mu\text{m}$ ,
- producing a fixed etched mirror (15) on the front face of the laser die (10),
- mounting the laser die (10) on a base (50), and
- producing a mobile reflector (20) on the base (50) to the rear of the laser die (10).